CLAIMS

1. A component verification method for verifying, by use of a computer, a component taken out by a mounter from a component holder against a component that should be mounted onto a board by said mounter, said component holder holding a plurality of components,

wherein the component holder is placed in the mounter with an integrated circuit (IC) tag being attached to said component holder, said IC tag storing identification information for identifying the components held by the component holder, and

the component verification method comprises:

a position specification step of specifying a placement position on the mounter where the component holder is placed;

a read step of reading the identification information from the IC tag attached to the component holder; and

a verification step of verifying (i) the identification information read out in the read step against prescribed component information for identifying a component that should be mounted onto the board, and (ii) the placement position specified in the position specification step against prescribed position information indicating a position where the component holder should be placed.

2. The component verification method according to Claim 1,

wherein in the position specification step, the placement position of the component holder is specified based on a state of a signal that is outputted from the IC tag via a wireless communication medium.

3. The component verification method according to Claim 2,

wherein the component holder is a component tape, and

the component verification method further comprises

a detection step of detecting a seam where the component

tape and a new component tape are connected, said new component tape having been newly placed in the mounter,

wherein in the read step, identification information for identifying components held by the new component tape is further read from an IC tag that is attached to said new component tape, when the seam is detected in the detection step, and

in the verification step, the identification information corresponding to the new component tape read out in the read step is further verified against the prescribed component information.

4. The component verification method according to Claim 2,

wherein two component holders loaded in a component cassette are placed in the mounter, and

in the position specification step, a positional relationship between the two component holders in the component cassette is further specified by specifying positions of IC tags attached to the respective two component holders, based on a state of a communication with each of the IC tags.

5. The component verification method according to Claim 1,

wherein the IC tag further stores alternative component information for identifying an alternative component that can serve as an alternative to each of the components held by the component holder,

in the read step, the alternative component information is further read from the IC tag attached to the component holder, and

in the verification step, the identification information and the alternative component information read out in the read step are verified against the prescribed component information.

6. The component verification method according to Claim 5,

wherein in the verification step, when the alternative

component information is verified against the prescribed component information, at least one of the following items that are related to the alternative component indicated in the alternative component information is verified against a corresponding item indicated in the prescribed component information: a name; a shape; and a characteristic value.

7. The component verification method according to Claim 1, further comprising

a warning step of warning that a wrong component holder is placed in the mounter, in the case where the identification information disagrees with the prescribed component information as a result of the verification performed in the verification step.

8. The component verification method according to Claim 1,

wherein a plurality of sensors are attached in a plurality of positions on the mounter where the component holder can be placed, said sensors capable of detecting that the component holder has been placed, and

in the position specification step, the placement position of the component holder is specified based on a result of the detection of each of the sensors.

9. A component number examination method for examining, by use of a computer, a number of components held by a component holder that holds a plurality of components, said number of components being subject to change when a component is taken out from said component holder by a mounter,

wherein the component holder is placed in the mounter with an integrated circuit (IC) tag being attached to said component holder, said IC tag storing the number of components and identification information for identifying the components held by the

component holder, and

the component number examination method comprises the following steps in addition to the steps included in the component verification method according to Claim 1:

a component number read step of reading the number of components from the IC tag attached to the component holder;

a decrement step of decrementing the number of components read out in the component number read step by one, every time the mounter takes out a component from the component holder for mounting the component onto a board; and

a warning step of issuing a warning when the number of components after the decrement in the decrement step becomes less than a predetermined value.

10. The component number examination method according to Claim 9, further comprising

a termination step of terminating the mounting onto the board by prohibiting the mounter from taking out any components from the component holder, when the number of components after the decrement in the decrement step becomes zero.

11. A component arrangement data generation method for generating, by use of a computer, component arrangement data for a mounter that mounts a component onto a board, said component arrangement data indicating a relationship between a placement position where a component holder holding a plurality of components is placed and the components held by said component holder,

wherein the component holder is placed in the mounter with an integrated circuit (IC) tag being attached to said component holder, said IC tag storing identification information for identifying the components held by the component holder, and

the component arrangement data generation method comprises:

a position specification step of specifying the placement position on the mounter where the component holder is placed;

a read step of reading the identification information from the IC tag attached to the component holder; and

a data generation step of generating the component arrangement data in which the placement position specified in the position specification step is associated with the identification information read out in the read step.

12. A component library generation method for generating, by use of a computer, a component library that is a collection of information related to components held by a component holder placed in a mounter,

wherein the component holder is attached with an integrated circuit (IC) tag storing identification information for identifying the components held by the component holder, and

the component library generation method comprises:

a read step of reading the identification information from the IC tag attached to the component holder; and

a generation step of generating the component library that includes the identification information read out in the read step.

13. The component library generation method according to Claim 12,

wherein in the read step, at least one of a name, a size, a color, and a shape that are related to the components is read as the identification information.

14. A component management method for managing, by use of a computer, a component that has been taken out from a component

holder and mounted onto a board by a mounter, said component holder holding a plurality of components,

wherein the component holder is attached with a first integrated circuit (IC) tag storing identification information for identifying the components held by the component holder, and

the component management method comprises:

a read step of reading the identification information from the first IC tag attached to the component holder;

a mounting step of successively taking out the components from the component holder and mounting said components onto the board; and

a write step of writing, to a second IC tag attached to the board, the identification information read out in the read step that is associated with each of the components mounted in the mounting step.

15. The component management method according to Claim 14,

wherein the component holder is a component tape that holds the plurality of components,

in the read step, the identification information is read from the first IC tag that is attached at a leading edge of the component tape, and

in the mounting step, the components are successively taken out and mounted onto the board, starting from the leading edge of the component tape.

16. The component management method according to Claim 15,

wherein in the read step, at least one of the following items that are related to each of the components is read from the first IC tag as the identification information: a lot number; a serial number; information indicating a manufacturer; information indicating a shape; manufacturing date; date on which the sealed components

were opened; and a number of components held by the component tape.

17. The component management method according to Claim 16,

wherein a leading edge of another component tape is connected to a trailing edge of the component tape, and

the component management method further comprises

a detection step of detecting a first IC tag that is attached to said another component tape that has been connected,

in the read step, identification information for identifying components held by said another component tape is further read from the first IC tag that is detected in the detection step,

in the mounting step, the components are further successively taken out and mounted onto the board, starting from the leading edge of said another component tape, and

in the write step, the identification information read from the first IC tag detected in the detection step is further written to the second IC tag, said identification information being associated with each of the components that have been taken out from said another component tape and mounted onto the board.

18. A component holder that holds a plurality of components, comprising an integrated circuit (IC) tag storing identification information for identifying said plurality of components.

19. The component holder according to Claim 18,

wherein the IC tag further stores a number of said plurality of components.

20. The component holder according to Claim 19,

wherein the IC tag further stores a size of said plurality of components.

21. The component holder according to Claim 20,

wherein the IC tag further stores at least one of the following items that are related to each of the plurality of components: a manufacturing date; information indicating a manufacturing facility; information indicating a lot; a component specification; a serial number; information indicating a manufacturer; information indicating a shape; and date on which the sealed components were opened.

22. A component verification apparatus that verifies a component taken out by a mounter from a component holder against a component that should be mounted onto a board by said mounter, said component holder holding a plurality of components,

wherein the component holder is placed in the mounter with an integrated circuit (IC) tag being attached to said component holder, said IC tag storing identification information for identifying the components held by the component holder, and

the component verification apparatus comprises:

a position specification unit operable to specify a placement position on the mounter where the component holder is placed;

a read unit operable to read the identification information from the IC tag attached to the component holder; and

a verification unit operable to verify (i) the identification information read out by the read unit against prescribed component information for identifying a component that should be mounted onto the board, and (ii) the placement position specified by the position specification unit against prescribed position information indicating a position where the component holder should be placed.

23. A component number examination apparatus that examines a number of components held by a component holder holding a

plurality of components, said number of components being subject to change when a component is taken out from said component holder by a mounter,

wherein the component holder is placed in the mounter with an integrated circuit (IC) tag being attached to said component holder, said IC tag storing the number of components and identification information for identifying the components held by the component holder, and

the component number examination apparatus comprises the following units in addition to the component verification apparatus according to Claim 22:

a component number read unit operable to read the number of components from the IC tag attached to the component holder;

a decrement unit operable to decrement, by one, the number of components read out by the component number read unit, every time the mounter takes out a component from the component holder for mounting the component onto a board; and

a warning unit operable to issue a warning when the number of components after the decrement by the decrement unit becomes less than a predetermined value.

24. A component arrangement data generation apparatus that generates component arrangement data for a mounter that mounts a component onto a board, said component arrangement data indicating a relationship between a placement position where a component holder holding a plurality of components is placed and the components held by said component holder,

wherein the component holder is placed in the mounter with an integrated circuit (IC) tag being attached to said component holder, said IC tag storing identification information for identifying the components held by the component holder, and

the component arrangement data generation apparatus

comprises:

a position specification unit operable to specify the placement position on the mounter where the component holder is placed;

a read unit operable to read the identification information from the IC tag attached to the component holder; and

a data generation unit operable to generate the component arrangement data in which the placement position specified by the position specification unit is associated with the identification information read out by the read unit.

25. A component library generation apparatus that generates a component library being a collection of information related to components held by a component holder placed in a mounter,

wherein the component holder is attached with an integrated circuit (IC) tag storing identification information for identifying the components held by the component holder, and

the component library generation apparatus comprises:

a read unit operable to read the identification information from the IC tag attached to the component holder; and

a generation unit operable to generate the component library that includes the identification information read out by the read unit.

26. A mounter that takes out a component from a component holder and mounts said component onto a board, said component holder holding a plurality of components,

wherein the component holder is attached with a first integrated circuit (IC) tag storing identification information for identifying the components held by the component holder, and

the mounter comprises:

a read unit operable to read the identification information from the first IC tag attached to the component holder;

a mounting unit operable to successively take out the components from the component holder and mount said components onto the board; and

a write unit operable to write, to a second IC tag attached to the board, the identification information that is associated with each of the components mounted by the mounting unit, said identification information being read out by the read unit.

27. The mounter according to Claim 26,

wherein the mounting unit mounts the components onto the board in a manner that depends on the identification information read out by the read unit.

28. The mounter according to Claim 27,

wherein the mounting unit includes:

a head that picks up each of the components from the component holder and mounts said each of the components onto the board; and

a drive unit operable to drive the head,

wherein the drive unit causes the head to pick up each of the components differently depending on the identification information read out by the read unit.

29. A mounter that takes out a component from a component holder and mounts said component onto a board, said component holder holding a plurality of components,

wherein the component holder is placed in the mounter with an integrated circuit (IC) tag being attached to said component holder, said IC tag storing identification information for identifying the components held by the component holder, and

the mounter comprises:

a position specification unit operable to specify a placement

position on the mounter where the component holder is placed;

a read unit operable to read the identification information from the IC tag attached to the component holder;

a verification unit operable to verify (i) the identification information read out by the read unit against prescribed component information for identifying a component that should be mounted onto the board, and (ii) the placement position specified by the position specification unit against prescribed position information indicating a position where the component holder should be placed; and

a mounting unit operable to take out each of the components from the component holder and mount said each of the components onto the board, when the identification information and the prescribed component information agree and the placement position and the prescribed position information agree as a result of the verification performed by the verification unit.

30. A program for verifying a component taken out by a mounter from a component holder against a component that should be mounted onto a board by said mounter, said component holder holding a plurality of components,

wherein the component holder is placed in the mounter with an integrated circuit (IC) tag being attached to said component holder, said IC tag storing identification information for identifying the components held by the component holder, and

the program causes a computer to execute the following steps:

a position specification step of specifying a placement position on the mounter where the component holder is placed;

a read step of reading the identification information from the IC tag attached to the component holder; and

a verification step of verifying (i) the identification

information read out in the read step against prescribed component information for identifying a component that should be mounted onto the board, and (ii) the placement position specified in the position specification step against prescribed position information indicating a position where the component holder should be placed.

31. A recording medium in which the program according to Claim 30 is stored.